

=> fil reg

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DICTIONARY FILE UPDATES: 25 JUL 2011 HIGHEST RN 1313702-17-8

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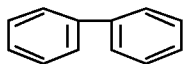
Please note that search-term pricing does apply when
conducting SmartSELECT searches.

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predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stndoc/properties.html>

=> d ide l3

L3 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2011 ACS on STN
RN 92-52-4 REGISTRY
ED Entered STN: 16 Nov 1984
CN 1,1'-Biphenyl (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Biphenyl (8CI)
OTHER NAMES:
CN 1,1'-Diphenyl
CN Bibenzene
CN Carolid AL
CN Diphenyl
CN NSC 14916
CN Phenylbenzene
CN Tetrosin LY
DR 1135443-72-9, 56481-93-7, 72931-46-5
MF C12 H10
CI COM
LC STN Files: AGRICOLA, ANABSTR, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS,
CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSNB,
DETERM*, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPAT, ENCOMPAT2, GMELIN*,
IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, PIRA,
PS, REAXYSFILE*, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

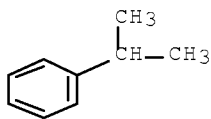


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

47610 REFERENCES IN FILE CA (1907 TO DATE)
 29792 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 47725 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d ide l4

L4 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2011 ACS on STN
 RN ~~98-82-8~~ REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Benzene, (1-methylethyl)- (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN ~~Cumene~~ (8CI)
 OTHER NAMES:
 CN (1-Methylethyl)benzene
 CN 2-Phenylpropane
 CN Cumol
 CN i-Propylbenzene
 CN ~~Isopropylbenzene~~
 CN NSC 8776
 MF C9 H12
 CI COM
 LC STN Files: AGRICOLA, ANABSTR, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, PIRA, REAXYSFILE*, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)

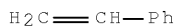


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

13394 REFERENCES IN FILE CA (1907 TO DATE)
 122 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 13432 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d ide 15

L5 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2011 ACS on STN
 RN 100-42-5 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Benzene, ethenyl- (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN ~~Styrene~~ (8CI)
 OTHER NAMES:
 CN Cinnamene
 CN Ethenylbenzene
 CN Maomin SM
 CN NSC 62785
 CN Phenethylene
 CN Phenylethene
 CN Phenylethylene
 CN Styrol
 CN Styrole
 CN Styrolene
 CN Styropol SO
 CN TTB 7302
 CN ~~Vinylbenzene~~
 CN Vinylbenzol
 DR 1161074-30-1, 1198090-46-8, 79637-11-9
 MF C8 H8
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, ENCOMPPAT, ENCOMPPAT2, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, PIRA, PS, REAXYSFILE*, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)



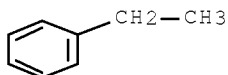
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

83187 REFERENCES IN FILE CA (1907 TO DATE)
 25554 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 83451 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d ide 16

L6 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2011 ACS on STN
 RN 100-41-4 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Benzene, ethyl- (CA INDEX NAME)
 OTHER NAMES:
 CN α -Methyltoluene
 CN EB
 CN ~~Ethylbenzene~~
 CN Ethylbenzol
 CN NSC 406903

CN Phenylethane
 MF C8 H10
 CI COM
 LC STN Files: AGRICOLA, ANABSTR, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSNB, DETHERM*, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, PIRA, REAXYSFILE*, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)

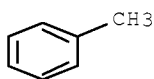


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

33070 REFERENCES IN FILE CA (1907 TO DATE)
 232 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 33237 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d ide 17

L7 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2011 ACS on STN
 RN 103-88-3 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Benzene, methyl- (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN ~~Toluene~~ (8CI)
 OTHER NAMES:
 CN 1-Methylbenzene
 CN Antisal 1a
 CN CP 25
 CN CP 25 (solvent)
 CN Methacide
 CN Methylbenzene
 CN Methylbenzol
 CN NSC 406333
 CN Phenylmethane
 CN Toluol
 DR 1053657-77-4, 1202864-97-8
 MF C7 H8
 CI COM
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, ENCOMPPAT, ENCOMPPAT2, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, PIRA, PS, REAXYSFILE*, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USPAT2, USPATFULL, VETU
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)

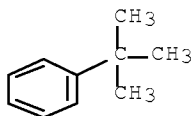


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

116880 REFERENCES IN FILE CA (1907 TO DATE)
 1086 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 117775 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d ide 18

L8 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2011 ACS on STN
 RN 98-06-6 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Benzene, tert-butyl- (8CI)
 OTHER NAMES:
 CN (1,1-Dimethylethyl)benzene
 CN 2-Methyl-2-phenylpropane
 CN Dimethylethylbenzene
 CN NSC 6557
 CN Phenyltrimethylmethane
 CN ~~t-Butylbenzene~~
 CN tert-Butylbenzene
 CN Trimethylphenylmethane
 MF C10 H14
 CI COM
 LC STN Files: AGRICOLA, ANABSTR, BIOSIS, CA, CAPLUS, CASREACT, CHEMCATS,
 CHEMINFORMRX, CHEMLIST, CHEMSAFE, CSNB, DETHERM*, EMBASE, ENCOMPLIT,
 ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, IFICDB, IFIPAT, IFIUDB,
 MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, REAXYSFILE*, RTECS*, SPECINFO,
 TOXCENTER, ULIDAT, USPAT2, USPATFULL, USPATOLD
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)



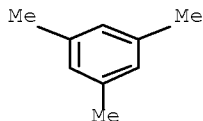
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3460 REFERENCES IN FILE CA (1907 TO DATE)
 19 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

3472 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d ide 19

L9 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2011 ACS on STN
RN 103-67-8 REGISTRY
ED Entered STN: 16 Nov 1984
CN Benzene, 1,3,5-trimethyl- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN ~~Mesitylene~~ (8CI)
OTHER NAMES:
CN 1,3,5-Trimethylbenzene
CN 2,4,6-Trimethylbenzene
CN 3,5-Dimethyltoluene
CN NSC 9273
CN sym-Trimethylbenzene
MF C9 H12
CI COM
LC STN Files: AGRICOLA, ANABSTR, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSNB, DDFU, DETHERM*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, PIRA, REAXYSFILE*, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USPAT2, USPATFULL
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

10921 REFERENCES IN FILE CA (1907 TO DATE)
169 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
10979 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d ide 114 tot

L14 ANSWER 1 OF 4 REGISTRY COPYRIGHT 2011 ACS on STN
RN 31620-80-1 REGISTRY
ED Entered STN: 16 Nov 1984
CN Benzene, bromoethyl- (CA INDEX NAME)
OTHER NAMES:
CN ~~Bromoethylbenzene~~
MF C8 H9 Br
CI IDS
LC STN Files: CA, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, CIN, TOXCENTER, USPATOLD
Other Sources: EINECS**, NDSL**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

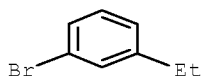


D1—Br

D1—Et

42 REFERENCES IN FILE CA (1907 TO DATE)
 42 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 2 OF 4 REGISTRY COPYRIGHT 2011 ACS on STN
 RN 2725-82-8 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Benzene, 1-bromo-3-ethyl- (CA INDEX NAME)
 OTHER NAMES:
 CN (3-Ethylphenyl)bromide
 CN 1-Bromo-3-ethylbenzene
 CN 3-Bromo-1-ethylbenzene
 CN 3-Ethylbromobenzene
 CN m-Bromoethylbenzene
 CN m-Ethylbromobenzene
 MF C8 H9 Br
 LC STN Files: CA, CAPLUS, CASREACT, CHEMCATS, REAXYSFILE*, TOXCENTER,
 USPAT2, USPATFULL, USPATOLD
 (*File contains numerically searchable property data)



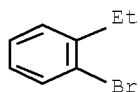
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

122 REFERENCES IN FILE CA (1907 TO DATE)
 123 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 3 OF 4 REGISTRY COPYRIGHT 2011 ACS on STN
 RN 1973-22-4 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Benzene, 1-bromo-2-ethyl- (CA INDEX NAME)
 OTHER NAMES:
 CN 1-Bromo-2-ethylbenzene
 CN 1-Ethyl-2-bromobenzene
 CN 2-Bromo-1-ethylbenzene
 CN 2-Ethylbromobenzene
 CN o-Bromoethylbenzene
 CN o-Ethylbromobenzene
 MF C8 H9 Br
 CI COM
 LC STN Files: CA, CAPLUS, CASREACT, CHEMCATS, CHEMLIST, DETHERM*, IFICDB,
 IFIPAT, IFIUDB, REAXYSFILE*, SPECINFO, TOXCENTER, USPAT2, USPATFULL
 (*File contains numerically searchable property data)

Other Sources: EINECS**

(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

228 REFERENCES IN FILE CA (1907 TO DATE)

230 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L14 ANSWER 4 OF 4 REGISTRY COPYRIGHT 2011 ACS on STN

RN 1585-07-5 REGISTRY

ED Entered STN: 16 Nov 1984

CN Benzene, 1-bromo-4-ethyl- (CA INDEX NAME)

OTHER NAMES:

CN 1-Bromo-4-ethylbenzene

CN 4-Bromoethylbenzene

CN 4-Ethyl-1-bromobenzene

CN 4-Ethylbromobenzene

CN 4-Ethylphenyl bromide

CN NSC 60144

CN p-Bromoethylbenzene

CN p-Ethylbromobenzene

CN p-Ethylphenyl bromide

MF C8 H9 Br

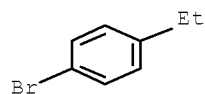
CI COM

LC STN Files: CA, CAPLUS, CASREACT, CHEMCATS, CHEMINFORMRX, CHEMLIST, DETHERM*, IFICDB, IFIPAT, IFIUDB, MSDS-OHS, REAXYSFILE*, SPECINFO, TOXCENTER, USPAT2, USPATFULL, USPATOLD

(*File contains numerically searchable property data)

Other Sources: EINECS**, NDSL**, TSCA**

(**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

448 REFERENCES IN FILE CA (1907 TO DATE)

1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

451 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d ide l15

L15 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2011 ACS on STN

RN 110-00-9 REGISTRY

ED Entered STN: 16 Nov 1984

CN Furan (CA INDEX NAME)
 OTHER NAMES:
 CN Divinylene oxide
 CN Furfuran
 CN Oxacyclopentadiene
 CN Oxole
 CN Tetrole
 MF C4 H4 O
 CI COM, RPS
 LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSNB, DETHERM*, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK*, MSDS-OHS, NAPRALERT, PIRA, REAXYSFILE*, RTECS*, SPECINFO, TOXCENTER, ULIDAT, USPAT2, USPATFULL
 (*File contains numerically searchable property data)
 Other Sources: DSL**, EINECS**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

11969 REFERENCES IN FILE CA (1907 TO DATE)
 2440 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 12010 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d ide 119 tot

L19 ANSWER 1 OF 4 REGISTRY COPYRIGHT 2011 ACS on STN
 RN 25496-07-5 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN 1,1'-Biphenyl, fluoro- (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Biphenyl, fluoro- (8CI)
 OTHER NAMES:
 CN Fluorobiphenyl
 MF C12 H9 F
 CI IDS
 LC STN Files: BIOSIS, CA, CAPLUS, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPAT2, USPATFULL, USPATOLD



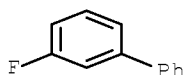
D1-F

D1-Ph

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

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12 REFERENCES IN FILE CAPLUS (1907 TO DATE)

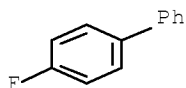
L19 ANSWER 2 OF 4 REGISTRY COPYRIGHT 2011 ACS on STN
RN 2367-22-8 REGISTRY
ED Entered STN: 16 Nov 1984
CN 1,1'-Biphenyl, 3-fluoro- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Biphenyl, 3-fluoro- (6CI, 7CI)
OTHER NAMES:
CN 3-Fluorobiphenyl
CN m-Fluorodiphenyl
MF C12 H9 F
LC STN Files: CA, CAPLUS, CASREACT, CHEMCATS, GMELIN*, REAXYSFILE*, RTECS*,
TOXCENTER, USPATFULL
(*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

53 REFERENCES IN FILE CA (1907 TO DATE)
53 REFERENCES IN FILE CAPLUS (1907 TO DATE)

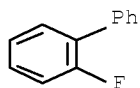
L19 ANSWER 3 OF 4 REGISTRY COPYRIGHT 2011 ACS on STN
RN 324-74-3 REGISTRY
ED Entered STN: 16 Nov 1984
CN 1,1'-Biphenyl, 4-fluoro- (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Biphenyl, 4-fluoro- (6CI, 7CI, 8CI)
OTHER NAMES:
CN (4-Fluorophenyl)benzene
CN 4'-Fluoro-1,1'-biphenyl
CN 4'-Fluorobiphenyl
CN 4-Fluoro-1,1'-biphenyl
CN 4-Fluorobiphenyl
CN NSC 56686
CN p-Fluorobiphenyl
CN p-Fluorodiphenyl
MF C12 H9 F
CI COM
LC STN Files: AGRICOLA, ANABSTR, BIOSIS, BIOTECHNO, CA, CAPLUS, CASREACT,
CHEMCATS, CHEMINFORMRX, CHEMLIST, EMBASE, IFICDB, IFIPAT, IFIUDB,
MEDLINE, REAXYSFILE*, RTECS*, SPECINFO, TOXCENTER, USPAT2, USPATFULL,
USPATOLD
(*File contains numerically searchable property data)
Other Sources: EINECS**
(*Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

366 REFERENCES IN FILE CA (1907 TO DATE)
 6 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 366 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L19 ANSWER 4 OF 4 REGISTRY COPYRIGHT 2011 ACS on STN
 RN 321-60-8 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN 1,1'-Biphenyl, 2-fluoro- (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Biphenyl, 2-fluoro- (6CI, 7CI, 8CI)
 OTHER NAMES:
 CN 2-Fluoro-1,1'-biphenyl
 CN 2-Fluorobiphenyl
 CN NSC 10366
 CN o-Fluorodiphenyl
 MF C12 H9 F
 LC STN Files: ANABSTR, BIOSIS, CA, CAPLUS, CASREACT, CHEMCATS, CHEMLIST,
 IFICDB, IFIPAT, IFIUDB, MSDS-OHS, REAXYSFILE*, RTECS*, SPECINFO,
 TOXCENTER, USPAT2, USPATFULL, USPATOLD
 (*File contains numerically searchable property data)
 Other Sources: EINECS**, NDSL**, TSCA**
 (**Enter CHEMLIST File for up-to-date regulatory information)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

206 REFERENCES IN FILE CA (1907 TO DATE)
 1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
 207 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> fil hcaplus
 FILE 'HCAPLUS' ENTERED AT 16:18:57 ON 26 JUL 2011
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FILE COVERS 1907 - 26 Jul 2011 VOL 155 ISS 5
 FILE LAST UPDATED: 25 Jul 2011 (20110725/ED)
 REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2011
 USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2011

HCAplus now includes complete International Patent Classification (IPC) reclassification data for the first quarter of 2011.

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<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d bib abs hitind hitstr tot 172

COMBINATION 1

L72 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2011 ACS on STN
 AN 2006:1065902 HCAPLUS Full-text
 DN 145:400980
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 IN Ishikawa, Hitoshi; Utsuki, Koji; Kusachi, Yuki
 PA Nec Corp., Japan
 SO Jpn. Kokai Tokkyo Koho, 39pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2006278106	A	20061012	JP 2005-94513	20050329
PRAI	JP 2005-94513		20050329		
OS	MARPAT 145:400980				

AB The solution contains (A) electrolyte salt, (B) aprotic solvent, (C) compound which polymerizes, decomp. with emission of gases, or are redox reactive under a voltage equal or above the maximum battery driving voltage, e.g. (partially hydrogenated) biphenyl, cyclobenzylhexyl, di-Ph ether, and (D) R3SO2CR1R4SO2R2 (R1, R4 = H, (un)substituted C1-5 alkyl, alkoxy, or fluoroalkyl, C1-5 polyfluoroalkyl, SO2X1; SY1, COZ, halogen; R2, R3 (un)substituted C1-5 alkyl, alkoxy, or fluoroalkyl, (un)substituted phenoxy, C1-5 polyfluoroalkyl, C1-5 polyfluoroalkoxy, OH, halo, NX2X3, NY2CONY3Y4; X1, Y1 = (un)substituted C1-5 alkyl; X2, X3, Y2-4, Z = H (un)substituted C1-5 alkyl). The solution may also contain cyclic mono- or disulfonic acid esters (given in Markush). Secondary batteries using the electrolyte solns. are also claimed. The batteries may be packed in laminates. The batteries are safe even when over-charged.

IPCI H01M0010-40 [I,A]; H01M0002-02 [I,A]; H01M0004-02 [I,A]; H01M0004-38 [I,A]; H01M0004-58 [I,A]

IPCR H01M0010-40 [I,A]; H01M0002-02 [I,A]; H01M0004-02 [I,A]; H01M0004-38 [I,A]; H01M0004-58 [I,A]

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

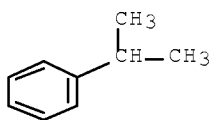
IT Battery electrolytes
 Secondary batteries

(electrolyte solns. containing disulfonylmethanes for secondary batteries)

with overcharging safety)
 IT 92-52-4, **Biphenyl**, uses 98-82-8, **Cumene**
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 (electrolyte solns. containing disulfonylmethanes for secondary batteries with overcharging safety)
 RN 92-52-4 HCAPLUS
 CN 1,1'-Biphenyl (CA INDEX NAME)



RN 98-82-8 HCAPLUS
 CN Benzene, (1-methylethyl)- (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L72 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2011 ACS on STN
 AN 2006:689399 HCAPLUS Full-text
 DN 145:127638
 TI Nonaqueous electrolyte solution for lithium secondary batteries
 IN Ahn, Sun Ho; Cho, Jeong Ju; Kim, Hyeong Jin; Lee, Han Ho; Lee, Ho Chun;
 Lee, Jae Heon; Son, Mi Yeong
 PA Lg Chem. Ltd., S. Korea
 SO Repub. Korean Kongkae Taeho Kongbo, No pp. given
 CODEN: KRXXA7
 DT Patent
 LA Korean
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	KR 2004023870	A	20040320	KR 2002-55309	20020912
PRAI	KR 2002-55309		20020912		

AB In this Li battery with a nonaq. electrolyte solution overcharge current is blocked through polymerization of electrolyte components by degradation due to oxidation, thereby improving safety. The nonaq. electrolyte solution comprises a Li salt, an electrolyte solution compound, 0.5-5% of a nonconductive polymer monomer, and 0.1-2% of a conductive polymer monomer. Preferably the nonconductive polymer monomer is cyclohexylbenzene, isopropylbenzene or 5-butylbenzene; and the conductive polymer monomer is biphenyl, 1-phenyl-1-cyclohexane or benzofuran. The Li secondary battery comprises a cathode, an anode, a porous separator, and the nonaq. electrolyte solution.

IPCI H01M0010-40 [ICM,7]

IPCR H01M0010-40 [I,A]

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Secondary batteries

(lithium; nonaq. electrolyte solution for lithium secondary batteries with safety feature)

IT Battery electrolytes
Safety

(nonaq. electrolyte solution for lithium secondary batteries with safety feature)

IT 92-52-4, **Biphenyl**, uses 98-82-8, **Isopropylbenzene**

RL: DEV (Device component use); USES (Uses)

(electrolyte containing; nonaq. electrolyte solution for lithium secondary batteries with safety feature)

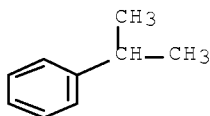
RN 92-52-4 HCAPLUS

CN 1,1'-Biphenyl (CA INDEX NAME)



RN 98-82-8 HCAPLUS

CN Benzene, (1-methylethyl)- (CA INDEX NAME)



L72 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 2006:600714 HCAPLUS Full-text

DN 145:48637

TI Secondary nonaqueous electrolyte batteries containing specific additives in organic electrolyte solutions

IN Oga, Keisuke; Iwanaga, Masato; Oshita, Ryuji

PA Sanyo Electric Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2006164742	A	20060622	JP 2004-354336	20041207
PRAI	JP 2004-354336		20041207		

AB The batteries consist of cathodes containing hetero element-containing LiCoO₂ cathode active mass with filling d. ≥3.6 g/cm³, anodes containing carbonaceous material anode active mass, and organic electrolyte solns. containing (a) alkylbenzene derivs., cycloalkylbenzene derivs, or biphenyl having tertiary carbon adjoining to Ph group and (b) Et diethylphosphinate . The batteries prevent swelling during long-term charge discharge cycles, and improve residual capacity.

IPCI H01M0010-40 [I,A]; H01M0004-02 [I,A]; H01M0004-58 [I,A]

IPCR H01M0010-40 [I,A]; H01M0004-02 [I,A]; H01M0004-58 [I,A]

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

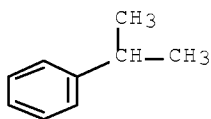
IT Secondary batteries

(lithium; secondary nonaq. electrolyte batteries containing specific additives in organic electrolyte solns.)

IT Battery anodes
Battery cathodes
Battery electrolytes
(secondary nonaq. electrolyte batteries containing specific additives in organic electrolyte solns.)
IT 92-52-4, **Biphenyl**, uses 98-82-8, **Cumene**
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(additive for electrolyte solution; secondary nonaq. electrolyte batteries containing specific additives in organic electrolyte solns.)
RN 92-52-4 HCAPLUS
CN 1,1'-Biphenyl (CA INDEX NAME)



RN 98-82-8 HCAPLUS
CN Benzene, (1-methylethyl)- (CA INDEX NAME)



L72 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2011 ACS on STN
AN 2005:823988 HCAPLUS Full-text
DN 143:232676
TI Nonaqueous electrolyte for lithium secondary battery
IN Ahn, Soon-Ho; Lee, Jae-Hyun; Cho, Jeong-Ju; Lee, Ho-Chun; Son, Mi-Young;
Kim, Hyeong-Jin; Lee, Han-Ho
PA LG Chem, Ltd., S. Korea
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005076403	A1	20050818	WO 2004-KR257	20040210
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,				
	CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,				
	GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK,				
	LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO,				
	NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,				
	TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ,				
	BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,				
	ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,				
	TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

EP 1728291	A1	20061206	EP 2004-709768	20040210
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LI, LU, MC, NL, PT, RO, SE, SI, SK, TR				
CN 1914761	A	20070214	CN 2004-80041548	20040210
CN 100502132	C	20090617		
JP 2007522632	T	20070809	JP 2006-553038	20040210
TW 250678	B	20060301	TW 2004-106934	20040316
US 20070141475	A1	20070621	US 2006-588481	20060801
PRAI WO 2004-KR257	W	20040210		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The invention relates to a nonaq. electrolyte solution containing new additives and a lithium secondary battery including the same. More particularly, the invention relates to a nonaq. electrolyte solution containing a lithium salt, an electrolyte compound, a first additive compound with an oxidation initiation potential of more than 4.2 V, and a second additive compound with an oxidation initiation potential of more than 4.2 V, which is higher in oxidation initiation potential than the first additive, and deposits oxidative products or form a polymer film, in oxidation, as well as a lithium secondary battery including the same. The present invention can provide a lithium secondary battery excellent in both the battery performance and the battery safety in overcharge by the combined use of the first additive and the second battery as additives to the nonaq. electrolyte solution.

IPCI H01M0010-40 [ICM,7]

IPCR H01B0001-12 [I,A]; H01M0010-40 [I,A]; H01M0010-42 [I,A]

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Secondary batteries

(lithium; nonaq. electrolyte for lithium secondary battery)

IT Battery electrolytes

(nonaq. electrolyte for lithium secondary battery)

IT 92-52-4, **Biphenyl**, uses 98-82-8, **Isopropylbenzene**

RL: MOA (Modifier or additive use); USES (Uses)

(nonaq. electrolyte for lithium secondary battery)

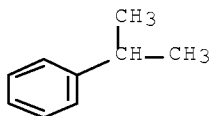
RN 92-52-4 HCAPLUS

CN 1,1'-Biphenyl (CA INDEX NAME)



RN 98-82-8 HCAPLUS

CN Benzene, (1-methylethyl)- (CA INDEX NAME)



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L72 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 2004:352048 HCAPLUS Full-text

DN 140:378001
 TI Secondary nonaqueous electrolyte battery
 IN Matsui, Toru; Deguchi, Masaki; Sonoda, Kumiko; Nishimura, Makiko; Koshina, Shigeru
 PA Matsushita Electric Industrial Co., Ltd., Japan; Panasonic Corporation
 SO Jpn. Kokai Tokkyo Koho, 18 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2004134261	A	20040430	JP 2002-298206	20021011
	JP 4313017	B2	20090812		
PRAI	JP 2002-298206		20021011		

AB The battery comprises a cathode, an anode, and a nonaq. electrolyte solution, having a solute dissolved in a solvent mixture which contains a main solvent and a secondary solvent; where the secondary solvent comprises a compound A, selected from cyclohexyl benzene, biphenyl, and/or di-Ph ether, and a compound X whose oxidation potential is 0.1-0.4 V higher than that of the compound A; and the weight ratio of the secondary solvent to the solvent mixture and the compound X to the secondary solvent is 0.01-5 and 20-99 resp.

IPCI H01M0010-36 [I,A]

IPCR H01M0010-40 [I,A]; H01M0010-36 [I,A]

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Battery electrolytes

(electrolyte solvents containing carbonates and aromatic compds. for secondary batteries)

IT 92-52-4, **Biphenyl**, uses 98-82-8

RL: DEV (Device component use); USES (Uses)

(electrolyte solvents containing carbonates and aromatic compds. for secondary batteries)

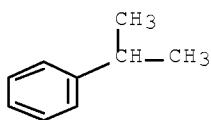
RN 92-52-4 HCAPLUS

CN 1,1'-Biphenyl (CA INDEX NAME)



RN 98-82-8 HCAPLUS

CN Benzene, (1-methylethyl)- (CA INDEX NAME)



OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

L72 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 2003:853424 HCAPLUS Full-text

DN 139:352674

TI Nonaqueous electrolyte secondary battery

IN Mori, Sumio
 PA Japan Storage Battery Co., Ltd., Japan; GS Yuasa Co., Ltd.
 SO Jpn. Kokai Tokkyo Koho, 9 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 2003308875	A	20031031	JP 2002-115896	20020418
	JP 4625231	B2	20110202		
PRAI	JP 2002-115896		20020418		

AB The secondary battery comprises a cathode, an anode, and nonaq. electrolyte containing ≥ 1 of sultone compds. (e.g. propane sultone, propene sultone, butane sultone), cyclic sulfates (e.g. glycol sulfate, propylene glycol sulfate), and vinylene carbonates, and ≥ 1 of derivs. of alkylbenzenes having tertiary carbon binding to the Ph groups (e.g. cumene, 1,3-diisopropyl benzene, 1,4-diisopropyl benzene, 1-Me Pr benzene, 1,3-bis(1-Me Pr)benzene, 1,4-bis(1-Me Pr)benzene), cycloalkyl benzenes (e.g. cyclohexyl benzene, cyclopentyl benzene), and biphenyl derivs. (e.g. biphenyl, 2-fluoro biphenyl, 2-bromo biphenyl, 2-chloro biphenyl). The battery is excellent in high temperature exposure characteristics.

IPCI H01M0010-0567 [I,A]; H01M0010-052 [I,A]

IPCR H01M0010-40 [I,A]

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Battery electrolytes
 Secondary batteries

(nonaq. electrolyte secondary battery)

IT 92-52-4, **Biphenyl**, uses 98-82-8, **Cumene**
 RL: NUU (Other use, unclassified); USES (Uses)
 (nonaq. electrolyte secondary battery)

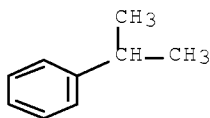
RN 92-52-4 HCAPLUS

CN 1,1'-Biphenyl (CA INDEX NAME)



RN 98-82-8 HCAPLUS

CN Benzene, (1-methylethyl)- (CA INDEX NAME)



OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

=> d bib abs hitind hitstr tot 174

COMBINATION 2

L74 ANSWER 1 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 2009:146058 HCAPLUS Full-text

DN 150:218258
 TI Swelling inhibition in batteries
 IN Mikhaylik, Yuriy V.; Kovalev, Igor
 PA Sion Power Corporation, USA
 SO U.S. Pat. Appl. Publ., 12pp.; Chemical Indexing Equivalent to 150:218253
 (WO)

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20090035646	A1	20090205	US 2007-888339	20070731
	WO 2009017726	A1	20090205	WO 2008-US9158	20080729
	W:	AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW			
	RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			

PRAI US 2007-888339 A 20070731

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The present invention relates generally to electrochem. cells, and more specifically, to additives for electrochem. cells which may enhance the performance of the cell. In some cases, the additive may advantageously interact with at least one component or species of the cell to increase the efficiency and/or lifetime of the cell. The incorporation of certain additives within the electrolyte of the cell may improve the cycling lifetime and/or performance of the cell.

INCL 429050000; 429163000; 429188000

IPCI H01M0006-14 [I,A]

IPCR H01M0006-14 [I,A]

NCL 429/050.000; 429/163.000; 429/188.000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Battery electrolytes

Secondary batteries

(swelling inhibition in batteries)

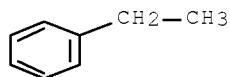
IT 100-41-4, **Ethylbenzene**, uses 100-42-5, **Styrene**, uses

RL: MOA (Modifier or additive use); USES (Uses)

(swelling inhibition in batteries)

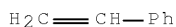
RN 100-41-4 HCAPLUS

CN Benzene, ethyl- (CA INDEX NAME)



RN 100-42-5 HCAPLUS

CN Benzene, ethenyl- (CA INDEX NAME)



L74 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN
 AN 2009:140215 HCAPLUS Full-text
 DN 150:218253
 TI Swelling inhibition in batteries
 IN Mikhaylik, Yuriy V.; Kovalev, Igor
 PA Sion Power Corporation, USA
 SO PCT Int. Appl., 31pp.; Chemical Indexing Equivalent to 150:218258 (US)
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2009017726	A1	20090205	WO 2008-US9158	20080729
	W:				
	AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,				
	CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES,				
	FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE,				
	KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,				
	ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH,				
	PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ,				
	TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW				
	RW:				
	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU,				
	IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK,				
	TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,				
	TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,				
	AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	US 20090035646	A1	20090205	US 2007-888339	20070731
PRAI	US 2007-888339	A	20070731		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The present invention relates generally to electrochem. cells, and more specifically, to additives for electrochem. cells which may enhance the performance of the cell. In some cases, the additive may advantageously interact with at least one component or species of the cell to increase the efficiency and/or lifetime of the cell. The incorporation of certain additives within the electrolyte of the cell may improve the cycling lifetime and/or performance of the cell.

IPCI H01M0004-62 [I,A]; H01M0010-44 [I,A]

IPCR H01M0004-62 [I,A]; H01M0010-44 [I,A]

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Secondary batteries

(lithium; swelling inhibition in batteries)

IT Battery electrolytes

(swelling inhibition in batteries)

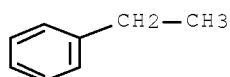
IT 100-41-4, uses 100-42-5, uses

RL: MOA (Modifier or additive use); USES (Uses)

(swelling inhibition in batteries)

RN 100-41-4 HCAPLUS

CN Benzene, ethyl- (CA INDEX NAME)



RN 100-42-5 HCAPLUS
 CN Benzene, ethenyl- (CA INDEX NAME)

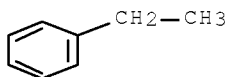


RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

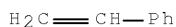
L74 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN
 AN 2006:340840 HCAPLUS Full-text
 DN 144:373068
 TI Polymer electrolyte fuel cell system and its operation by supplying
 organic substance
 IN Nogi, Atsushi; Shibata, Motokazu; Takeguchi, Shinsuke; Yasumoto, Eiichi;
 Hato, Kazuhito
 PA Matsushita Electric Industrial Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 23 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2006100194	A	20060413	JP 2004-286932	20040930
PRAI	JP 2004-286932		20040930		

AB The title system is equipped with an oxidant gas supply line, a means for
 adding a detergent chosen from organic substances having unsatd. bond or
 forming unsatd. bond by oxidation with the oxidant gas, and a means for
 controlling addition of the detergent. The system prevents decrease of cell
 damage caused by mixing of an organic foreign substance.
 IPCI H01M0008-06 [I,A]; H01M0008-10 [I,A]
 IPCR H01M0008-06 [I,A]; H01M0008-10 [I,A]
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 IT Fuel cells
 (polymer electrolyte; organic substance in oxidant gas supply for
 operation of polymer electrolyte fuel cell system)
 IT 100-41-4, **Ethylbenzene**, uses 100-42-5, **Styrene**, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (detergent; organic substance in oxidant gas supply for operation of
 polymer electrolyte fuel cell system)
 RN 100-41-4 HCAPLUS
 CN Benzene, ethyl- (CA INDEX NAME)



RN 100-42-5 HCAPLUS
 CN Benzene, ethenyl- (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L74 ANSWER 4 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 2005:823988 HCAPLUS Full-text

DN 143:232676

TI Nonaqueous electrolyte for lithium secondary battery

IN Ahn, Soon-Ho; Lee, Jae-Hyun; Cho, Jeong-Ju; Lee, Ho-Chun; Son, Mi-Young;
Kim, Hyeong-Jin; Lee, Han-Ho

PA LG Chem, Ltd., S. Korea

SO PCT Int. Appl., 33 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005076403	A1	20050818	WO 2004-KR257	20040210
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1728291	A1	20061206	EP 2004-709768	20040210
	R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LI, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	CN 1914761	A	20070214	CN 2004-80041548	20040210
	CN 100502132	C	20090617		
	JP 2007522632	T	20070809	JP 2006-553038	20040210
	TW 250678	B	20060301	TW 2004-106934	20040316
	US 20070141475	A1	20070621	US 2006-588481	20060801
PRAI	WO 2004-KR257	W	20040210		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The invention relates to a nonaq. electrolyte solution containing new additives and a lithium secondary battery including the same. More particularly, the invention relates to a nonaq. electrolyte solution containing a lithium salt, an electrolyte compound, a first additive compound with an oxidation initiation potential of more than 4.2 V, and a second additive compound with an oxidation initiation potential of more than 4.2 V, which is higher in oxidation initiation potential than the first additive, and deposits oxidative products or form a polymer film, in oxidation, as well as a lithium secondary battery including the same. The present invention can provide a lithium secondary battery excellent in both the battery performance and the battery safety in overcharge by the combined use of the first additive and the second battery as additives to the nonaq. electrolyte solution.

IPCI H01M0010-40 [ICM,7]

IPCR H01B0001-12 [I,A]; H01M0010-40 [I,A]; H01M0010-42 [I,A]

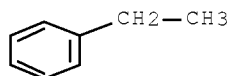
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Secondary batteries

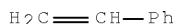
(Lithium; nonaq. electrolyte for lithium secondary battery)

IT Battery electrolytes

(nonaq. electrolyte for lithium secondary battery)
 IT 100-41-4, **Ethylbenzene**, uses 100-42-5, **Vinylbenzene**, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (nonaq. electrolyte for lithium secondary battery)
 RN 100-41-4 HCAPLUS
 CN Benzene, ethyl- (CA INDEX NAME)



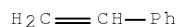
RN 100-42-5 HCAPLUS
 CN Benzene, ethenyl- (CA INDEX NAME)



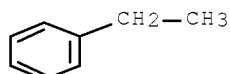
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L74 ANSWER 5 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN
 AN 2004:650537 HCAPLUS Full-text
 DN 142:218629
 TI Catalytic hydrogenation of organic compounds without H2 supply: an
 electrochemical system
 AU do Amaral Ferraz Navarro, Daniela Maria; Navarro, Marcelo
 CS Departamento de Quimica fundamental-CCEN, Universidade Federal de
 Pernambuco, Recife, 50740-901, Brazil
 SO Journal of Chemical Education (2004), 81(9), 1350-1352
 CODEN: JCEDA8; ISSN: 0021-9584
 PB Journal of Chemical Education, Dept. of Chemistry
 DT Journal
 LA English
 AB The electrocatalytic hydrogenation of organic compds. is a simple and
 interesting procedure that may exemplify the advantages of electrochem. An
 electrochem. system for the catalytic hydrogenation of organic compds. without
 a hydrogen supply is described. The process employs an electrochem. apparatus
 for the generation of hydrogen in situ. An experiment was developed for an
 undergraduate organic chemical laboratory course, and can be used to introduce
 the catalytic hydrogenation reaction, catalysis, electrochem. principles, and
 gas chromatog. The experiment employs a sacrificial anode because it
 simplifies the electrochem. system and allows use of an undivided cell.
 CC 20-4 (History, Education, and Documentation)
 Section cross-reference(s): 22, 72
 IT Cathodes
 Electrochemical cells
 Electrolysis catalysts
 Gas chromatography
 Laboratory experiment
 Sacrificial anodes
 (catalytic hydrogenation of organic compds. without H2 supply)
 IT 100-42-5, **Styrene**, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (catalytic hydrogenation of organic compds. without H2 supply)
 RN 100-42-5 HCAPLUS

CN Benzene, ethenyl- (CA INDEX NAME)



IT 100-41-4P, preparation
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (catalytic hydrogenation of organic compds. without H2 supply)
 RN 100-41-4 HCAPLUS
 CN Benzene, ethyl- (CA INDEX NAME)



RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L74 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN
 AN 2004:456351 HCAPLUS Full-text
 DN 141:163788
 TI Electrocatalytic hydrogenation of organic compounds using a nickel
 sacrificial anode
 AU Santana, Diogo S.; Melo, Givaldo O.; Lima, Marcio V. F.; Daniel, Jorge R.
 R.; Areias, Madalena C. C.; Navarro, Marcelo
 CS Departamento de Quimica Fundamental, Centro de Ciencias Exatas e da
 Natureza, CEP, Universidade Federal de Pernambuco, UFPE, Recife, 50670-901
 PE, Brazil
 SO Journal of Electroanalytical Chemistry (2004), 569(1), 71-78
 CODEN: JECHES
 PB Elsevier
 DT Journal
 LA English
 AB An electrochem. method, aimed at the hydrogenation of organic substrates, was
 developed, using a Ni sacrificial anode. The electrochem. system included an
 Fe cathode with deposited Ni and presented good electrochem. efficiency. Some
 different parameters such as co-solvent, c.d., supporting electrolyte and pH
 were studied to obtain the maximum efficiency for the process. An elevated
 cell voltage was observed (2.3 V) when 0.2M NH4OAc was used as supporting
 electrolyte, whereas in NH4Cl expts. could be carried out at a low potential
 (1.3 V). Electrocatalytic hydrogenation (ECH) of organic substrates showed
 that nonconjugated olefins (cyclohexene and geraniol) were not reactive, while
 conjugated substrates (2-cyclohexen-1-one, benzaldehyde, acetophenone, styrene,
 trans-trans-2,4-hexadien-1-ol, 1,3-cyclohexadiene, citral and linalool) showed
 good reactivity and selectivity in some cases. A direct correlation was
 observed between the electrochem. efficiency, substrate concentration and c.d.
 CC 72-2 (Electrochemistry)
 Section cross-reference(s): 22, 23, 25
 IT Electrolytic cells
 (with nickel sacrificial and iron cathode with electrodeposited nickel
 for hydrogenation of organic compds.)
 IT 100-42-5, **Styrene**, properties
 RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
 (electrocatalytic hydrogenation in cell with nickel sacrificial anode
 and iron cathode with electrodeposited nickel in aqueous methanol)

containing ammonium salt)

RN 100-42-5 HCAPLUS

CN Benzene, ethenyl- (CA INDEX NAME)

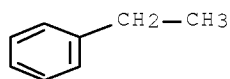


IT 100-41-4P, **Ethylbenzene**, properties

RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(preparation in electrocatalytic hydrogenation of styrene in cell with
nickel sacrificial anode and iron cathode with electrodeposited nickel
in aqueous methanol containing ammonium salt)

RN 100-41-4 HCAPLUS

CN Benzene, ethyl- (CA INDEX NAME)



OSC.G 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L74 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 2004:220281 HCAPLUS Full-text

DN 140:238272

TI Production of high purity hydrogen by integrated flameless distributed
combustion-membrane steam reforming

IN Matzakos, Andreas Nicholas; Wellington, Scott Lee; Clomburg, Lloyd Anthony;
Veenstra, Peter; Munshi, Abdul Wahid; Jean, Rong-her; Elliott, Glenn William;
Groeneveld, Michiel Jan

PA Shell Oil Company, USA; Miglin, Maria Therese

SO PCT Int. Appl., 64 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004022480	A2	20040318	WO 2003-US27995	20030905
	WO 2004022480	A3	20041007		
	WO 2004022480	B1	20041216		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CA 2497441	A1	20040318	CA 2003-2497441	20030905
	AU 2003268522	A1	20040329	AU 2003-268522	20030905
	EP 1534627	A2	20050601	EP 2003-749491	20030905

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

JP 2005538022	T	20051215	JP 2004-534713	20030905
NO 2005001646	A	20050419	NO 2005-1646	20050404
US 20060248800	A1	20061109	US 2005-526915	20050701
PRAI US 2002-408427P	P	20020905		
WO 2003-US27995	W	20030905		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB High purity hydrogen is produced by steam reforming of a vaporizable hydrocarbon at 200-700° and 1-200 bar in an integrated flameless distributed combustion-membrane steam reforming (FDC-MSR) reactor. The flameless distributed combustion drives the steam reforming reaction which provides great improvements in heat exchange efficiency and load following capabilities. The reactor may contain multiple flameless distributed combustion chambers and multiple hydrogen-selective, hydrogen-permeable, membrane tubes. The hydrogen-selective membrane is made of a Pd-alloy layer supported on a porous metal, particularly a Pd-alloy layer deposited by electroless plating on porous metal with an in-situ oxide protection layer. The porous metal can be (i) porous nickel-based alloy, [ii] porous Hastelloy, and (iii) porous Inconel. The feed and reaction gases may flow through the reactor either radially or axially. The vaporizable hydrocarbon can be natural gas, methane, ethylbenzene, methanol, ethane, ethanol, propane, butane, light C1-4 hydrocarbons, light petroleum fractions including naphtha, diesel, kerosene, jet fuel or gas oil. The system includes an integrated FDC-membrane de-hydrogenation reactor for producing high purity hydrogen and styrene by dehydrogenation of ethylbenzene. The produced hydrogen is used to power a high-pressure internally manifolded molten carbonate fuel cell. The design of the FDC-SMR powered fuel cell makes it possible to capture good concns. of CO₂ for sequestration or for enhanced recovery of oil in oil wells or methane in coal bed formations.

IPCI C01B0003-38 [ICM,7]; C01B0003-50 [ICS,7]; C01B0003-48 [ICS,7]; C01B0003-32 [ICS,7]; B01J0019-24 [ICS,7]; B01J0008-06 [ICS,7]; C07C0005-333 [ICS,7]; H01M0008-06 [ICS,7]; C01B0031-20 [ICS,7]

IPCR B01B0001-00 [I,A]; B01J0008-00 [I,A]; B01J0008-02 [I,A]; B01J0008-06 [I,A]; C01B0003-38 [I,A]; C01B0003-50 [I,A]; C01B0031-20 [I,A]; C07C0005-333 [I,A]; H01M0008-06 [I,A]

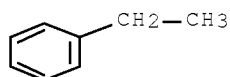
CC 51-11 (Fossil Fuels, Derivatives, and Related Products)
Section cross-reference(s): 49, 52, 59

IT Fuel cells
(molten carbonate; production of high purity hydrogen by integrated flameless distributed combustion-membrane steam reforming)

IT 100-41-4, **Ethyl benzene**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(dehydrogenation; production of high purity hydrogen by integrated flameless distributed combustion-membrane steam reforming)

RN 100-41-4 HCAPLUS

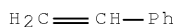
CN Benzene, ethyl- (CA INDEX NAME)



IT 100-42-5P, **Styrene**, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(production of high purity hydrogen by integrated flameless distributed combustion-membrane steam reforming)

RN 100-42-5 HCAPLUS

CN Benzene, ethenyl- (CA INDEX NAME)



OSC.G 12 THERE ARE 12 CAPLUS RECORDS THAT CITE THIS RECORD (13 CITINGS)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L74 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 2003:376054 HCAPLUS Full-text

DN 138:357255

TI Fabrication of extruded thin-walled articles from ceramic or metal powders in a polymeric binder system

IN Smirnova, Alevtina; Crosbie, Gary Mark; Pett, Robert Allan

PA Ford Global Technologies, Inc., USA; Ford Global Technologies, LLC

SO U.S. Pat. Appl. Publ., 6 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20030090027	A1	20030515	US 2001-683031	20011109
	US 6827892	B2	20041207		
	US 20050065259	A1	20050324	US 2004-950880	20040927
PRAI	US 2001-683031	A3	20011109		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB A polymeric binder system is used to prepare mixts. with ceramic or metal powders for forming thin-walled articles such as thin-walled tubes by extrusion. The extrusion method comprises providing a polymeric binder system comprising a homogeneous solution of a polymeric binder in an organic solvent, adding a ceramic or metal powder to form a mixture, and evaporating the solvent from the mixture before die extrusion, heat-treatment to burn-off the binder and sintering of the green ceramics.

INCL 264177110; 428036900; 264638000; 264670000; 524081000

IPCI B32B0001-08 [ICM,7]; C04B0035-634 [ICS,7]

IPCR C04B0035-634 [I,A]; H01M0008-12 [I,A]

NCL 264/177.110; 264/638.000; 264/670.000; 428/036.900; 524/081.000; 264/104.000; 264/150.000; 264/165.000; 264/176.100; 264/209.100

CC 57-2 (Ceramics)

Section cross-reference(s): 38

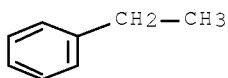
IT 100-41-4, **Ethylbenzene**, uses 100-42-5, **Styrene**, uses

RL: NUU (Other use, unclassified); USES (Uses)

(solvent; fabrication of extruded thin-walled articles from ceramic or metal powders in a polymeric binder system)

RN 100-41-4 HCAPLUS

CN Benzene, ethyl- (CA INDEX NAME)



RN 100-42-5 HCAPLUS

CN Benzene, ethenyl- (CA INDEX NAME)

$$\text{H}_2\text{C}=\text{CH}-\text{Ph}$$

OSC.G 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)
 RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L74 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 2003:282182 HCAPLUS Full-text

DN 138:289859

TI Method for producing nanocarbon material

IN Kawakami, Soichiro; Yamamoto, Tomoya; Sano, Hitomi; Tani, Atsushi

PA Canon Kabushiki Kaisha, Japan

SO Eur. Pat. Appl., 34 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1300364	A2	20030409	EP 2002-22459	20021004
	EP 1300364	A3	20050112		
	EP 1300364	B1	20110126		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
	JP 2003221217	A	20030805	JP 2002-289557	20021002
	JP 4109952	B2	20080702		
	US 20030086859	A1	20030508	US 2002-263754	20021004
	US 7001581	B2	20060221		
	CN 1429767	A	20030716	CN 2002-154271	20021004
	CN 1305759	C	20070321		
	AT 496867	T	20110215	AT 2002-22459	20021004
PRAI	JP 2001-309271	A	20011004		
	JP 2002-289557	A	20021002		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB Nanocarbon material is produced from aromatic compound-containing starting material by contacting it with a supercrit. fluid or a subcrit. fluid in the presence of a transition metal element-containing catalyst at a temperature of 350-800° and at a pressure of 3-50 MPa. The supercrit. fluid or said subcrit. fluid is formed from one or more kinds of materials selected from the group consisting of an aromatic compound as said starting material, a solvent for said aromatic compound, a solvent for said catalyst, water, dinitrogen monoxide, and ammonia.

IPCI B82B0003-00 [I,A]; C01B0031-02 [I,A]; B01J0003-00 [I,A]

IPCR B82B0003-00 [I,A]; B01J0003-00 [I,A]; B01J0020-20 [I,A]; B01J0023-755 [I,A]; B01J0027-22 [I,A]; B01J0027-25 [I,A]; B01J0031-04 [I,A]; B01J0031-22 [I,A]; C01B0031-02 [I,A]; D01F0009-127 [I,A]; F17C0011-00 [I,A]; H01J0009-02 [I,A]; H01M0004-58 [I,A]; H01M0004-86 [I,A]

CC 49-1 (Industrial Inorganic Chemicals)

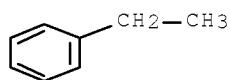
IT 100-41-4, **Ethylbenzene**, reactions 100-42-5, **Styrene**, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

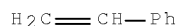
(method for producing nanocarbon material from aromatic compds. using transition metal catalysts)

RN 100-41-4 HCAPLUS

CN Benzene, ethyl- (CA INDEX NAME)

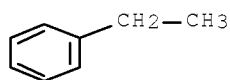


RN 100-42-5 HCAPLUS
 CN Benzene, ethenyl- (CA INDEX NAME)

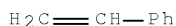


OSC.G 16 THERE ARE 16 CAPLUS RECORDS THAT CITE THIS RECORD (34 CITINGS)
 RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L74 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN
 AN 2003:148537 HCAPLUS Full-text
 DN 139:135948
 TI Technical assessment of fuel cell operation on landfill gas at the Groton,
 CT, landfill
 AU Spiegel, R. J.; Preston, J. L.
 CS US Environmental Protection Agency (EPA), National Risk Management
 Research Laboratory, Research Triangle Park, NC, 27711, USA
 SO Energy (Oxford, United Kingdom) (2003), 28(5), 397-409
 CODEN: ENEYDS; ISSN: 0360-5442
 PB Elsevier Science Ltd.
 DT Journal
 LA English
 AB This paper summarizes the results of a seminal assessment conducted on a fuel
 cell technol. that generates elec. power from landfill waste gas. This
 assessment at Groton, Connecticut was the second such project conducted by the
 Environmental Protection Agency, the first being conducted at the Penrose
 Power Station near Los Angeles, California. The main objective was to
 demonstrate the suitability of the landfill gas energy conversion equipment at
 Groton with different conditions and gas compns. than at Penrose. The
 operation of the landfill gas cleanup system removed contaminants from the gas
 stream with essentially the same efficacy as at Penrose, even though the
 quantity and kinds of contaminants were somewhat different. The maximum
 output power of fuel cell power plant improved from 137 kW at Penrose to 165
 kW at Groton, due to a 31% increase in the heating value of the Groton
 landfill gas.
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 IT Fuel cells
 (power plants; tech. assessment of fuel cell operation on landfill gas)
 IT Fuel cells
 (tech. assessment of fuel cell operation on landfill gas)
 IT 100-41-4, **Ethylbenzene**, processes 100-42-5, **Styrene**, processes
 RL: REM (Removal or disposal); PROC (Process)
 (landfill gas containing; tech. assessment of fuel cell operation on
 landfill gas)
 RN 100-41-4 HCAPLUS
 CN Benzene, ethyl- (CA INDEX NAME)



RN 100-42-5 HCAPLUS
 CN Benzene, ethenyl- (CA INDEX NAME)



OSC.G 10 THERE ARE 10 CAPLUS RECORDS THAT CITE THIS RECORD (10 CITINGS)
 RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L74 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 2002:773833 HCAPLUS Full-text

DN 137:303358

TI Secondary power source and its manufacture

IN Kuruma, Isamu; Morimoto, Takeshi; Tsushima, Manabu

PA Japan Carlit Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002298849	A	20021011	JP 2001-103633	20010402
	WO 2002082568	A1	20021017	WO 2002-JP3305	20020402
	W: CN, US				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				

PRAI JP 2001-103633 A 20010402

AB The power source has an activated C pos. electrode, a neg. electrode of graphitic carbonaceous material, having d002 0.334-0.337 nm, coated with a low crystallinity carbonaceous material, and an electrolyte solution containing a Li salt dissolved in an organic solvent. The power source is prepared by contacting the graphitic material with an organic vapor, and pyrolyzing the vapor to form the low crystallinity coating.

IPCI H01M0004-58 [ICM,7]; C01B0031-04 [ICS,7]; C23C0016-26 [ICS,7];
 H01G0009-058 [ICS,7]; H01G0009-038 [ICS,7]; H01M0004-02 [ICS,7];
 H01M0010-40 [ICS,7]

IPCR C01B0031-04 [I,A]; C23C0016-26 [I,A]; H01G0009-038 [I,A]; H01G0009-058 [I,A];
 H01M0004-02 [I,A]; H01M0004-36 [N,A]; H01M0004-58 [I,A]; H01M0010-40 [I,A]

CC 76-10 (Electric Phenomena)
 Section cross-reference(s): 52

IT Secondary batteries

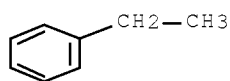
(lithium; secondary power source containing activated carbon pos electrodes and graphitic carbon neg. electrodes and lithium salt electrolytes)

IT 100-41-4, **Ethylbenzene**, processes 100-42-5, **Styrene**, processes
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)

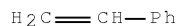
(in manufacture of graphitic carbon with low crystallinity carbonaceous coatings for neg. electrodes for secondary power source)

RN 100-41-4 HCAPLUS

CN Benzene, ethyl- (CA INDEX NAME)



RN 100-42-5 HCAPLUS
 CN Benzene, ethenyl- (CA INDEX NAME)



OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

L74 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN
 AN 2002:368715 HCAPLUS Full-text
 DN 136:360989
 TI Electrochemical process for oxidation of alkanes to alkenes
 IN Chuang, Karl T.; Sanger, Alan R.; Luo, Jingli; Slavov, Stefan V.
 PA The Governors of the University of Alberta, Can.
 SO PCT Int. Appl., 38 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

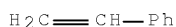
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002038832	A1	20020516	WO 2001-CA1603	20011109
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	CA 2325768	A1	20020510	CA 2000-2325768	20001110
	CA 2428200	A1	20020516	CA 2001-2428200	20011109
	CA 2428200	C	20100119		
	AU 2002020391	A	20020521	AU 2002-20391	20011109
	GB 2387178	A	20031008	GB 2003-11458	20011109
	US 20040050713	A1	20040318	US 2003-415885	20031010
	US 7338587	B2	20080304		
PRAI	CA 2000-2325768	A	20001110		
	WO 2001-CA1603	W	20011109		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

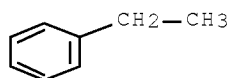
AB An electrochem. process for the oxidation of an alkane to at least one corresponding alkene uses an electrochem. cell having an anode chamber on one side of a proton conducting medium, and a cathode chamber on the other side of the said medium. The alkane is oxidized in the anode chamber to produce at least one corresponding alkene and protons are transferred through a proton conducting membrane to the cathode chamber where protons combine with a proton acceptor, while generating electricity and water. An apparatus for use in the process is also provided.

IPCI C25B0003-02 [ICM,7]; H01M0008-00 [ICS,7]; H01M0008-10 [ICS,7]

IPCR C25B0003-02 [I,A]; H01M0004-86 [I,A]; H01M0004-92 [I,A]; H01M0008-04 [I,A];
H01M0008-10 [I,A]
CC 72-7 (Electrochemistry)
Section cross-reference(s): 23, 48, 67
IT Electrolytic cells
(membrane; electrochem. process for oxidation of alkanes to alkenes in)
IT 100-42-5P, **Styrene**, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical
process); PNU (Preparation, unclassified); PREP (Preparation); PROC
(Process)
(C2-C6; electrochem. process for oxidation of Et benzene to)
RN 100-42-5 HCAPLUS
CN Benzene, ethenyl- (CA INDEX NAME)



IT 100-41-4, **Ethyl benzene**, reactions
RL: CPS (Chemical process); PEP (Physical, engineering or chemical
process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(electrochem. process for oxidation of alkanes to alkenes)
RN 100-41-4 HCAPLUS
CN Benzene, ethyl- (CA INDEX NAME)

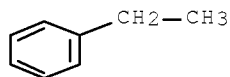


RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

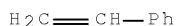
L74 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN
AN 1999:615296 HCAPLUS Full-text
DN 131:259900
TI Fuel cell operation on landfill gas at Penrose Power Station
AU Spiegel, R. J.; Preston, J. L.; Trocciola, J. C.
CS National Risk Management Research Laboratory, United States Environmental
Protection Agency, Research Triangle Park, NC, 27711, USA
SO Energy (Oxford) (1999), 24(8), 723-742
CODEN: ENEYDS; ISSN: 0360-5442
PB Elsevier Science Ltd.
DT Journal
LA English
AB This demonstration test successfully demonstrated the operation of a com.
phosphoric acid fuel cell (FC) on landfill gas (LG) at the Penrose Power
Station in Sun Valley, CA. Demonstration output included operation up to 137
kW; 37.1% efficiency at 120 kW; exceptionally low secondary emissions (dry
gas, 15% O₂) of 0.77 ppmV CO, 0.12 ppmV NO_x, and undetectable SO₂; no forced
outages with an adjusted availability of 98.5%; and a total of 707 h of
operation on LG. The LG pretreatment unit (GPU) operated for a total of 2297
h, including the 707 h with the FC, and documented total sulfur and halide
removal to much lower than the specified <3 ppmV for the FC. The GPU flare
safely disposed of the removed LG contaminants by achieving destruction
efficiencies greater than 99%.
CC 52-4 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 59

IT Fuel cells
 (fuel cell operation on landfill gas at Penrose Power Station)
 IT 100-41-4, **Ethylbenzene**, occurrence 100-42-5, occurrence
 RL: OCU (Occurrence, unclassified); POL (Pollutant); OCCU (Occurrence)
 (fuel cell operation on landfill gas at Penrose Power Station)
 RN 100-41-4 HCAPLUS
 CN Benzene, ethyl- (CA INDEX NAME)



RN 100-42-5 HCAPLUS
 CN Benzene, ethenyl- (CA INDEX NAME)



OSC.G 14 THERE ARE 14 CAPLUS RECORDS THAT CITE THIS RECORD (14 CITINGS)
 RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L74 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 1999:231880 HCAPLUS Full-text

DN 130:269694

TI Manufacture of anodes containing lithium mixed nitrides and secondary lithium batteries using them

IN Shodai, Takahisa; Saito, Keiichi; Sakurai, Yoji; Yamaki, Junichi; Yamaura, Junichi; Kondo, Shigeo; Tsutsumi, Shuji; Hasegawa, Masaki

PA Nippon Telegraph and Telephone Corp., Japan; Matsushita Battery Industrial Co., Ltd.

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 11097020	A	19990409	JP 1997-276502	19970924
	JP 3461698	B2	20031027		
PRAI	JP 1997-276502		19970924		

AB The title anodes are manufactured by dispersing active mass containing Li-containing transition metal nitrides Li_1+xMyN (M = transition metals; $x = 0.2-2.0$; $y = 0.1-0.5$) in organic solvents selected from aliphatic hydrocarbons and aromatic hydrocarbons. Secondary Li batteries using the above anodes are also claimed. The batteries suppress shedding of active mass and have long cycle life.

IPCI H01M0004-58 [ICM,6]; H01M0004-02 [ICS,6]; H01M0004-04 [ICS,6]; H01M0004-62 [ICS,6]; H01M0010-40 [ICS,6]

IPCR H01M0004-58 [I,A]; H01M0004-02 [I,A]; H01M0004-04 [I,A]; H01M0004-62 [I,A]; H01M0010-40 [I,A]

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Secondary batteries

(lithium; solvents in manufacture of anodes containing lithium transition

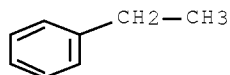
metal nitrides for batteries)

IT Battery anodes
(solvents in manufacture of anodes containing lithium transition metal
nitrides for batteries)
for batteries)

IT 100-41-4, **Ethylbenzene**, uses 100-42-5, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvents in manufacture of anodes containing lithium transition metal
nitrides for batteries)

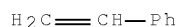
RN 100-41-4 HCAPLUS

CN Benzene, ethyl- (CA INDEX NAME)



RN 100-42-5 HCAPLUS

CN Benzene, ethenyl- (CA INDEX NAME)



L74 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 1998:488274 HCAPLUS Full-text

DN 129:154052

OREF 129:31273a,31276a

TI Hydrogenation method and electrolytic cell containing hydrogen-absorbing
cathode

IN Shimamune, Takayuki; Tanaka, Masashi; Hirao, Kazuhiro; Yoshida, Hiroki;
Nishiki, Yoshinori; Iwakura, Chiaki; Inoue, Hiroshi

PA Permelec Electrode Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 10195686	A	19980728	JP 1997-13083	19970107
	JP 3561108	B2	20040902		
PRAI	JP 1997-13083		19970107		

AB The electrolytic cell is divided into an electrolysis chamber and a
hydrogenation chamber by a cathode made of a hydrogen-absorbing material. A
porous hydrogen-absorbing body is elec. connected to the cathode. By
conducting electrolysis, the active hydrogen which was generated, absorbed,
and permeated at the cathode is used to hydrogenate a compound to be
hydrogenated. The hydrogen-absorbing body is selected from the group
consisting of Pd, Pd alloy, and Ni. Hydrogen is absorbed by the cathode so
even an excess hydrogen is generated, it is absorbed by the cathode therefore
it is not discharged so that hydrogen can be utilized effectively.

IPCI C25B0003-04 [ICM,6]; C25B0009-00 [ICS,6]

IPCR C25B0003-04 [I,A]; C25B0009-00 [I,A]; C25B0009-08 [I,A]; C25B0009-18 [I,A]

CC 72-3 (Electrochemistry)

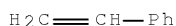
Section cross-reference(s): 23, 25

IT Electrolytic cells
Hydrogenation
(electrolytic cell containing hydrogen-absorbing cathode for hydrogenation)

IT 100-42-5, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(electrolytic cell containing hydrogen-absorbing cathode for hydrogenation of)

RN 100-42-5 HCAPLUS

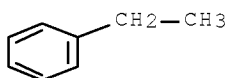
CN Benzene, ethenyl- (CA INDEX NAME)



IT 100-41-4P, **Ethylbenzene**, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(formation in hydrogenation of styrene in electrolytic cell containing hydrogen-absorbing cathode)

RN 100-41-4 HCAPLUS

CN Benzene, ethyl- (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L74 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 1997:794623 HCAPLUS Full-text

DN 128:120903

OREF 128:23579a,23582a

TI Successive hydrogenation of styrene using a two-compartment cell separated by hydrogen storage alloy sheet electrodes

AU Iwakura, Chiaki; Abe, Toshiyuki; Inoue, Hiroshi

CS Dep. Applied Chem., Coll. Eng., Osaka Prefecture Univ., Osaka, 593, Japan

SO Denki Kagaku oyobi Kogyo Butsuri Kagaku (1997), 65(12), 1120-1121
CODEN: DKOKAZ; ISSN: 0366-9297

PB Denki Kagaku Kyokai

DT Journal

LA English

AB LaNi₅ and MnNi_{3.6}Mn_{0.4}Al_{0.3}Co_{0.7} were used as working electrodes and separators. Electrochem. reduction of water occurs on one side of the LaNi₅ and MnNi_{3.6}Mn_{0.4}Al_{0.3}Co_{0.7} electrodes in KOH solution and the absorbed hydrogen atoms diffuse to the other side and are utilized as a hydrogen source for hydrogenation of styrene to ethylbenzene.

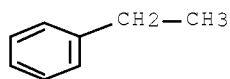
CC 72-2 (Electrochemistry)
Section cross-reference(s): 22, 25

IT Electrolytic cells
(two-compartment cell separated by hydrogen storage alloy sheet electrodes for hydrogenation of styrene)

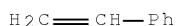
IT 100-41-4P, **Ethylbenzene**, properties
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(successive hydrogenation of styrene to ethylbenzene using two-compartment cell separated by hydrogen storage alloy sheet electrodes)

RN 100-41-4 HCAPLUS

CN Benzene, ethyl- (CA INDEX NAME)



IT 100-42-5, **Styrene**, properties
 RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
 (successive hydrogenation of styrene using two-compartment cell separated
 by hydrogen storage alloy sheet electrodes)
 RN 100-42-5 HCAPLUS
 CN Benzene, ethenyl- (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
 RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L74 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 1996:248799 HCAPLUS Full-text

DN 124:300826

OREF 124:55535a,55538a

TI A new successive system for hydrogenation of styrene using a
 two-compartment cell separated by a Pd sheet electrode

AU Iwakura, Chiaki; Abe, toshiyuki; Inoue, Hiroshi

CS Coll. Eng., Osaka Prefecture Univ., Sakai, 593, Japan

SO Journal of the Electrochemical Society (1996), 143(4), L71-L72

CODEN: JESOAN; ISSN: 0013-4651

PB Electrochemical Society

DT Journal

LA English

AB A new successive system for hydrogenation of styrene was constructed using a
 two-compartment cell separated by a Pd sheet electrode. The sole product in
 the hydrogenation of styrene was ethylbenzene. The amount of ethylbenzene
 produced increased linearly with electrolysis time after a certain induction
 period and the rate of ethylbenzene production depended on the applied
 current. The current efficiency for the production of ethylbenzene in this
 system exceeded 93% at an applied current of 10 mA.

CC 72-2 (Electrochemistry)

Section cross-reference(s): 25, 66

IT Electrolytic cells

(new successive system for hydrogenation of styrene using
 two-compartment cell separated by Pd sheet electrode)

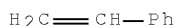
IT 100-42-5, **Styrene**, properties

RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)

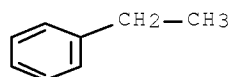
(new successive system for hydrogenation of styrene using
 two-compartment cell separated by Pd sheet electrode)

RN 100-42-5 HCAPLUS

CN Benzene, ethenyl- (CA INDEX NAME)



IT 100-41-4P, **Ethylbenzene**, properties
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (preparation in hydrogenation of styrene using two-compartment cell
 separated by Pd sheet electrode)
 RN 100-41-4 HCAPLUS
 CN Benzene, ethyl- (CA INDEX NAME)



OSC.G 24 THERE ARE 24 CAPLUS RECORDS THAT CITE THIS RECORD (24 CITINGS)

L74 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 1991:665430 HCAPLUS Full-text

DN 115:265430

OREF 115:44941a,44944a

TI Electrochemical reactors and multicomponent membranes useful for oxidation reactions

IN Cable, Thomas L.; Frye, John G., Jr.; Kliever, Wayne R.; Mazanec, Terry J.

PA Standard Oil Co., USA

SO Eur. Pat. Appl., 49 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 8

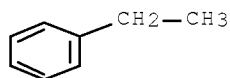
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 438902	A2	19910731	EP 1990-314083	19901220
	EP 438902	A3	19920325		
	EP 438902	B1	19970507		
	EP 438902	B2	20030618		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	US 5306411	A	19940426	US 1990-618792	19901127
	EP 766330	A1	19970402	EP 1996-117077	19901220
	EP 766330	B1	20020605		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	ZA 9010408	A	19911030	ZA 1990-10408	19901227
	CN 1214276	A	19990421	CN 1997-121101	19971015
	US 6287432	B1	20010911	US 1999-333168	19990614
PRAI	US 1989-457327	A	19891227		
	US 1989-457340	A	19891227		
	US 1989-457384	A	19891227		
	US 1990-510296	A	19900416		
	US 1990-618792	A	19901127		
	US 1987-25511	A2	19870313		
	US 1989-357317	B2	19890525		
	EP 1990-314083	A3	19901220		
	US 1995-487945	A1	19950607		
	US 1996-615580		19960313		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

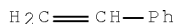
AB A solid multicomponent membrane, for use in an electrochem. reactor, is characterized by a mixed metal oxide material having a perovskite structure comprising (1) a lanthanide, Y, or a combination of a lanthanide and Y; (2) ≥ 1

alkaline earth metal; (3) Fe, and (4) Cr, Ti, or a combination of Cr and Ti. Also described is an element for use in an electrochem. reactor or reactor cell having a 1st surface capable of reducing O to O ions, a 2nd surface capable of reacting O ions with an O-consuming gas, an electron-conductive path between the 1st and 2nd surfaces and an O ion-conductive path between the 1st and 2nd surfaces characterized in that the element comprises (A) a mixed metal oxide material having a perovskite structure and (B) a conductive coating, a catalyst, or a conductive coating comprising a catalyst. The reactor permits the carrying out of a number of electrochem. reactions.

IPCI H01M0008-12 [ICM,5]; C25B0005-00 [ICS,5]; B01D0071-02 [ICS,5]
 IPCR B01D0053-32 [I,A]; B01D0071-02 [I,A]; B01J0004-04 [I,A]; B01J0008-00 [I,A]; B01J0012-00 [I,A]; B01J0019-00 [I,A]; B01J0019-24 [I,A]; B01J0023-86 [I,A]; C01B0003-36 [I,A]; C01B0003-38 [I,A]; C01B0013-02 [I,A]; C01C0003-02 [I,A]; C01G0045-00 [I,A]; C01G0049-00 [I,A]; C01G0051-00 [I,A]; C25B0003-02 [I,A]; C25B0005-00 [I,A]; H01M0004-86 [I,A]; H01M0008-02 [I,A]; H01M0008-12 [I,A]
 CC 72-2 (Electrochemistry)
 Section cross-reference(s): 45, 51, 52, 57, 59
 IT Electrolytic cells
 (diaphragm, for multiple electrochem. reactions)
 IT 100-41-4P, **Ethyl benzene**, preparation 100-42-5P, **Styrene**, preparation
 RL: PREP (Preparation)
 (production of, electrochem. reactor for)
 RN 100-41-4 HCAPLUS
 CN Benzene, ethyl- (CA INDEX NAME)



RN 100-42-5 HCAPLUS
 CN Benzene, ethenyl- (CA INDEX NAME)



OSC.G 34 THERE ARE 34 CAPLUS RECORDS THAT CITE THIS RECORD (38 CITINGS)

L74 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 1980:520893 HCAPLUS Full-text

DN 93:120893

OREF 93:19201a

TI Effect of certain electrolytes on colloid-chemical properties of sodium pentadecanesulfonate in an aqueous medium

AU Aratyunyan, R. S.; Stepanyan, N. A.; Simonyan, L. Kh.; Atanasyan, E. N.; Beileryan, N. M.

CS Erevan. Univ., Yerevan, USSR

SO Kolloidnyi Zhurnal (1980), 42(4), 727-31

CODEN: KOZHAG; ISSN: 0023-2912

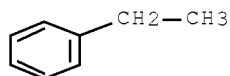
DT Journal

LA Russian

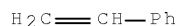
AB The effect of NaCl, KCl, and K2SO4 was studied on average micellar weight and kinetics of solubilization of styrene, EtPh, chloroprene, and Me methacrylate in aqueous Na pentadecane sulfonate solution. At a certain concentration of the electrolytes, the apparent micellar weight is min. The rate and the extent of solubilization grows in the presence of the electrolytes. The

distribution consts. and the changes of free energy of solubilization in the presence and without electrolytes were calculated

CC 66-4 (Surface Chemistry and Colloids)
 IT Electrolytes
 (solubilization of micelles in presence of)
 IT 100-41-4, properties 100-42-5, properties
 RL: PRP (Properties)
 (micelles of, solubilization of, electrolyte effect on)
 RN 100-41-4 HCAPLUS
 CN Benzene, ethyl- (CA INDEX NAME)



RN 100-42-5 HCAPLUS
 CN Benzene, ethenyl- (CA INDEX NAME)



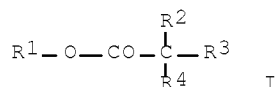
=> => d bib abs hitind hitstr tot 176

COMBINATION 3

L76 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2011 ACS on STN
 AN 2009:796668 HCAPLUS Full-text
 DN 151:128553
 TI Nonaqueous electrolyte secondary battery
 IN Takahashi, Kentaro
 PA Sanyo Electric Co., Ltd., Japan
 SO U.S. Pat. Appl. Publ., 8pp.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 1

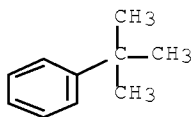
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20090170007	A1	20090702	US 2008-342667	20081223
	JP 2009163937	A	20090723	JP 2007-340514	20071228
	CN 101471459	A	20090701	CN 2008-10190203	20081226
PRAI	JP 2007-340514	A	20071228		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
 OS MARPAT 151:128553
 GI

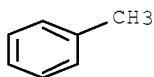


AB A non-aqueous electrolyte secondary cell is provided having enhanced safety against overcharge and reduced self-discharge. The non-aqueous electrolyte secondary cell includes: a pos. electrode having a pos. electrode active material; a neg. electrode having a neg. electrode active material; and a non-aqueous electrolyte containing a non-aqueous solvent and electrolytic salt. The non-aqueous solvent contains 20 to 80 volume% tertiary carboxylic acid ester represented by formula (I) at 25° and 1 atmospheric. The non-aqueous electrolyte contains an alkylbenzene compound and/or a halogenated benzene compound where R1 to R4 each denote a straight-chained or branched alkyl group having 4 or less carbon atoms and may be the same or different.

INCL 429343000
 IPCI H01M0010-00 [I,A]
 IPCR H01M0010-00 [I,A]
 NCL 429/343.000
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 IT Battery electrolytes
 Secondary batteries
 (nonaq. electrolyte secondary battery)
 IT 98-06-6, **tert-Butylbenzene** 108-88-3, **Toluene**, uses
 RL: TEM (Technical or engineered material use); USES (Uses)
 (nonaq. electrolyte secondary battery)
 RN 98-06-6 HCAPLUS
 CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)



RN 108-88-3 HCAPLUS
 CN Benzene, methyl- (CA INDEX NAME)



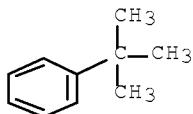
L76 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2011 ACS on STN
 AN 2007:793705 HCAPLUS Full-text
 DN 147:193049
 TI Additives for nonaqueous electrolyte and lithium secondary battery using the same
 IN Lee, Ho Chun; Shin, Sun Sik; Park, Hong Kyu; Jeon, Joo Mi; Cho, Jeong Ju
 PA Lg Chem, Ltd., S. Korea
 SO U.S. Pat. Appl. Publ., 8 pp.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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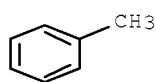
PI US 20070166609 A1 20070719 US 2007-623845 20070117
 US 7927747 B2 20110419
 KR 2007076522 A 20070724 KR 2007-5085 20070117
 KR 789107 B1 20071226
 WO 2007083917 A1 20070726 WO 2007-KR276 20070117
 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
 CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
 GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN,
 KP, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN,
 MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS,
 RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ,
 UA, UG, UZ, VC, VN, ZA, ZM, ZW
 RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
 IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,
 CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,
 GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
 KG, KZ, MD, RU, TJ, TM
 EP 1979979 A1 20081015 EP 2007-708501 20070117
 R: DE, FR, GB, SE
 CN 101375459 A 20090225 CN 2007-80003300 20070117
 CN 101375459 B 20101027
 PRAI KR 2006-5058 A 20060117
 WO 2007-KR276 W 20070117

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB Disclosed is an electrolyte for batteries, comprising: (a) an electrolyte salt; (b) an organic solvent; (c) a first compound having an oxidation initiation voltage (vs.Li/Li+) higher than the operating voltage of a cathode; and (d) a second reversible compound having an oxidation initiation voltage higher than the operating voltage of the cathode, but lower than the oxidation initiation voltage of the first compound. Also disclosed is a lithium secondary battery comprising the electrolyte. In the lithium secondary battery, two compds. having different safety improvement actions at a voltage higher than the operating voltage of the cathode are used in combination as electrolyte components. Thus, the safety of the secondary battery in an overcharged state can be ensured, and at the same time, the deterioration of the battery can be prevented from occurring when it is repeatedly cycled, continuously charged and stored at high temperature for a long time.
 INCL 429105000; 429324000; 429200000; 429326000
 IPCI H01M0008-20 [I,A]; H01M0010-40 [I,A]; H01M0006-16 [I,A]; H01M0006-04 [I,A]
 IPCR H01M0008-20 [I,A]; H01M0010-0525 [I,A]; H01M0010-0567 [I,A]; H01M0010-36 [I,A]
 NCL 429/105.000; 429/200.000; 429/324.000; 429/326.000; 429/327.000
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 IT Battery electrolytes
 Safety
 (additives for nonaq. electrolyte of lithium secondary battery)
 IT Secondary batteries
 (lithium; additives for nonaq. electrolyte of lithium secondary battery)
 IT 98-06-6, ~~tert-Butylbenzene~~ 108-88-3, ~~Toluene~~, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (additives for nonaq. electrolyte of lithium secondary battery)
 RN 98-06-6 HCAPLUS
 CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)



RN 108-88-3 HCAPLUS
 CN Benzene, methyl- (CA INDEX NAME)



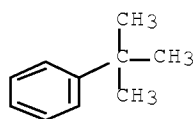
L76 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2011 ACS on STN
 AN 2006:918270 HCAPLUS Full-text
 DN 145:274968
 TI Nonaqueous electrolyte secondary battery
 IN Iwanaga, Masato; Nishida, Nobumichi; Tsutsumi, Shuji
 PA Sanyo Electric Co., Ltd., Japan
 SO U.S. Pat. Appl. Publ., 9pp.
 CODEN: USXXCO
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 20060199077	A1	20060907	US 2006-359965	20060223
	JP 2006236725	A	20060907	JP 2005-48171	20050224
	KR 2006094477	A	20060829	KR 2006-17530	20060223
	CN 1825675	A	20060830	CN 2006-10009554	20060224
	CN 100539291	C	20090909		
PRAI	JP 2005-48171	A	20050224		

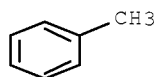
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The invention concerns a non-aqueous electrolyte secondary battery with excellent discharge cycle characteristics and a charging termination potential ranging from 4.4 to 4.6 V based on lithium, consisting of a pos. electrode comprising a pos. electrode active material, a neg. electrode, and a non-aqueous electrolyte containing a non-aqueous solvent and an electrolyte salt, in which the pos. electrode active material comprises a mixture of a lithium-cobalt composite oxide containing at least both zirconium and magnesium in LiCoO₂, and a lithium-manganese-nickel composite oxide having a layered structure and containing at least both manganese and nickel, and the potential of the pos. electrode active material ranges from 4.4 to 4.6 V based on lithium, and the non-aqueous electrolyte contains at least one of aromatic compds. selected from the group consisting at least of toluene derivs., anisole derivs., biphenyl, cyclohexyl benzene, tert-Bu benzene, tert-amyl benzene, and di-Ph ether.

INCL 429231300; 429231600; 429224000; 429223000; 429326000
 IPCI H01M0004-52 [I,A]; H01M0004-50 [I,A]; H01M0010-40 [I,A]
 IPCR H01M0004-52 [I,A]; H01M0004-50 [I,A]; H01M0010-40 [I,A]
 NCL 429/231.300; 429/223.000; 429/224.000; 429/231.600; 429/326.000
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 IT Battery cathodes
 Battery electrolytes
 Secondary batteries
 (nonaq. electrolyte secondary battery)
 IT 98-06-6, **tert-Butylbenzene** 108-88-3D, **Toluene**, derivative
 RL: MOA (Modifier or additive use); USES (Uses)
 (nonaq. electrolyte secondary battery)
 RN 98-06-6 HCAPLUS
 CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)



RN 108-88-3 HCAPLUS
 CN Benzene, methyl- (CA INDEX NAME)



L76 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2011 ACS on STN
 AN 2005:823988 HCAPLUS Full-text
 DN 143:232676
 TI Nonaqueous electrolyte for lithium secondary battery
 IN Ahn, Soon-Ho; Lee, Jae-Hyun; Cho, Jeong-Ju; Lee, Ho-Chun; Son, Mi-Young;
 Kim, Hyeong-Jin; Lee, Han-No
 PA LG Chem, Ltd., S. Korea
 SO PCT Int. Appl., 33 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

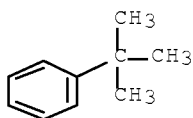
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2005076403	A1	20050818	WO 2004-KR257	20040210	
	W:			AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW		
	RW:			BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG		
	EP 1728291	A1	20061206	EP 2004-709768	20040210	
	R:			AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LI, LU, MC, NL, PT, RO, SE, SI, SK, TR		
	CN 1914761	A	20070214	CN 2004-80041548	20040210	
	CN 100502132	C	20090617			
	JP 2007522632	T	20070809	JP 2006-553038	20040210	
	TW 250678	B	20060301	TW 2004-106934	20040316	
	US 20070141475	A1	20070621	US 2006-588481	20060801	
PRAI	WO 2004-KR257	W	20040210			

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

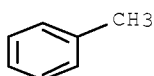
AB The invention relates to a nonaq. electrolyte solution containing new additives and a lithium secondary battery including the same. More particularly, the invention relates to a nonaq. electrolyte solution containing a lithium salt, an electrolyte compound, a first additive compound

with an oxidation initiation potential of more than 4.2 V, and a second additive compound with an oxidation initiation potential of more than 4.2 V, which is higher in oxidation initiation potential than the first additive, and deposits oxidative products or form a polymer film, in oxidation, as well as a lithium secondary battery including the same. The present invention can provide a lithium secondary battery excellent in both the battery performance and the battery safety in overcharge by the combined use of the first additive and the second battery as additives to the nonaq. electrolyte solution.

IPCI H01M0010-40 [ICM,7]
 IPCR H01B0001-12 [I,A]; H01M0010-40 [I,A]; H01M0010-42 [I,A]
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 IT Secondary batteries
 (lithium; nonaq. electrolyte for lithium secondary battery)
 IT Battery electrolytes
 (nonaq. electrolyte for lithium secondary battery)
 IT 98-06-6, **tert-Butylbenzene** 108-88-3, **Toluene**, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (nonaq. electrolyte for lithium secondary battery)
 RN 98-06-6 HCAPLUS
 CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)



RN 108-88-3 HCAPLUS
 CN Benzene, methyl- (CA INDEX NAME)



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L76 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 2005:219962 HCAPLUS Full-text

DN 142:282886

TI Nonaqueous solvent secondary battery

IN Takahashi, Kentaro

PA Sanyo Electric Co., Ltd., Japan

SO U.S. Pat. Appl. Publ., 11 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	US 20050053843	A1	20050310	US 2004-936658	20040909
	US 7582388	B2	20090901		
	JP 2005085608	A	20050331	JP 2003-316641	20030909

TW 238554	B	20050821	TW 2004-110633	20040416
CN 1595711	A	20050316	CN 2004-10048573	20040608
CN 100466362	C	20090304		
PRAI JP 2003-316641	A	20030909		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The invention concerns a nonaq. solvent secondary battery with a high initial charge/discharge capacity and excellent charge/discharge characteristics at high temperature, having a pos. electrode containing a pos. electrode active material capable of reversibly occluding and releasing lithium, a neg. electrode containing a neg. electrode active material capable of reversibly occluding and releasing lithium and a non-aqueous solvent electrolyte containing (1) acrylic acid anhydride, and (2) an aromatic compound having at least one electron donating group, wherein the electron donating group comprises at least one member selected from any of the alkyl group, alkoxy group, alkylamino group and amine, provided that each of the alkyl group, alkoxy group and alkylamino group includes a halogen substituted group and a cycloaliph. group.

INCL 429329000; 429303000

IPCI H01M0006-16 [I,A]; H01M0006-14 [I,A]

IPCR H01M0004-02 [I,A]; H01M0004-58 [I,A]; H01M0010-00 [I,A]; H01M0010-40 [I,A]; H01M0006-16 [I,A]; H01M0006-14 [I,A]

NCL 429/329.000; 429/303.000; 429/301.000; 429/324.000; 429/326.000; 429/327.000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Battery electrolytes

Secondary batteries

(nonaq. solvent secondary battery)

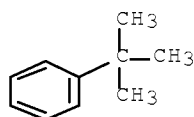
IT 98-06-6, **tert-Butylbenzene** 108-88-3, **Toluene**, uses

RL: DEV (Device component use); USES (Uses)

(nonaq. solvent secondary battery)

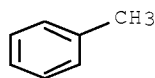
RN 98-06-6 HCAPLUS

CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)



RN 108-88-3 HCAPLUS

CN Benzene, methyl- (CA INDEX NAME)



OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L76 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2011 ACS on STN

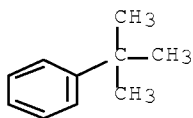
AN 2003:982461 HCAPLUS Full-text

DN 140:44701

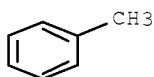
TI Redox mediator as an overcharge protection agent for 4 V class lithium-ion

rechargeable cells

AU Shima, Kunihisa; Ue, Makoto; Yamaki, Jun-ichi
 CS Mitsubishi Chemical Group Science and Technology Research Center, Inc.,
 Ami, Inashiki, Ibaraki, 300-0332, Japan
 SO Electrochemistry (Tokyo, Japan) (2003), 71(12), 1231-1235
 CODEN: EECTFA; ISSN: 1344-3542
 PB Electrochemical Society of Japan
 DT Journal
 LA English
 AB It is well-known that an aromatic compound such as biphenyl is added into
 electrolyte solns. to prevent lithium-ion batteries from overcharging,
 generating hydrogen gas under overcharging conditions. We have examined the
 oxidative behaviors of one-benzene-ring aromatic compds. including benzene,
 toluene, ethylbenzene, cumene, *tert*-butylbenzene, and cyclohexylbenzene under
 the overcharging conditions. We have found that aromatic compds. without
 hydrogen atom at the benzylic position such as *tert*-butylbenzene generated
 mainly carbon dioxide, whereas those with hydrogen atom at the benzylic
 position showed polymerization accompanied by hydrogen evolution. It was
 considered that *tert*-butylbenzene works as a redox mediator, which mediates
 the oxidative decomposition of carbonate solvents evolving the carbon dioxide.
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 IT Secondary batteries
 (aromatic compound redox mediators as overcharge protection agent for 4 V
 class lithium-ion batteries)
 IT 98-06-6, ***tert*-Butylbenzene** 108-88-3, **Toluene**, uses
 RL: MOA (Modifier or additive use); USES (Uses)
 (aromatic compound redox mediators as overcharge protection agent for 4 V
 class lithium-ion batteries)
 RN 98-06-6 HCAPLUS
 CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)



RN 108-88-3 HCAPLUS
 CN Benzene, methyl- (CA INDEX NAME)



OSC.G 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)
 RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> => d 183 bib abs hitind hitstr

L83 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2011 ACS on STN
 AN 1963:468800 HCAPLUS Full-text
 DN 59:68800

OREF 59:12665c-d

TI An electrochemical method of reducing aromatic compounds selectively to dihydro or tetrahydro products

AU Benkeser, Robert A.; Kaiser, Edwin M.

CS Purdue Univ., West Lafayette, IN

SO Journal of the American Chemical Society (1963), 85(18), 2858-9
CODEN: JACSAT; ISSN: 0002-7863

DT Journal

LA Unavailable

OS CASREACT 59:68800

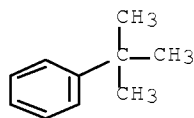
AB In a simple electrolytic cell with an asbestos divider separating anode and cathode, aromatic hydrocarbons were reduced to cycloolefins. Similarly, but without the divider, 1,4-dihydro compds. were obtained. With the cell divided, anhydrous MeNH₂ and LiCl were placed in each compartment, and the hydrocarbon in the cathode. Thus, 12 g. cumene, 17 g. LiCl, and 450 ml. MeNH₂ (in each compartment) treated with 50,000 coulombs gave 75% product, consisting of 89% isopropylcyclohexenes (I) and 11% cumene, while without the divider, the same quantities gave 82% product, consisting of 78% 2,5-dihydroisopropylbenzene, 6% I, 13% cumene, and 3% unidentified diene. Similar results were obtained with C₆H₆, PhMe, PhEt, and PhCMe₃. It was postulated that the actual reducing agent was Li generated at the cathode.

CC 35 (Noncondensed Aromatic Compounds)

IT 98-06-6, **Benzene, tert-butyl-**
(reduction of, electrochem)

RN 98-06-6 HCAPLUS

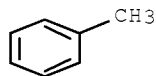
CN Benzene, (1,1-dimethylethyl)- (CA INDEX NAME)



IT 108-88-3, **Toluene**
(reduction of, electrochem.)

RN 108-88-3 HCAPLUS

CN Benzene, methyl- (CA INDEX NAME)



OSC.G 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)

=> d bib abs hitind hitstr tot 178

COMBINATION 4

L78 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2011 ACS on STN

AN 2005:823988 HCAPLUS Full-text

DN 143:232676

TI Nonaqueous electrolyte for lithium secondary battery

IN Ahn, Soon-Ho; Lee, Jae-Hyun; Cho, Jeong-Ju; Lee, Ho-Chun; Son, Mi-Young;
Kim, Hyeong-Jin; Lee, Han-Ho

PA LG Chem, Ltd., S. Korea

SO PCT Int. Appl., 33 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005076403	A1	20050818	WO 2004-KR257	20040210
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
EP	1728291	A1	20061206	EP 2004-709768	20040210
	R:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LI, LU, MC, NL, PT, RO, SE, SI, SK, TR			
CN	1914761	A	20070214	CN 2004-80041548	20040210
CN	100502132	C	20090617		
JP	2007522632	T	20070809	JP 2006-553038	20040210
TW	250678	B	20060301	TW 2004-106934	20040316
US	20070141475	A1	20070621	US 2006-588481	20060801
PRAI	WO 2004-KR257	W	20040210		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The invention relates to a nonaq. electrolyte solution containing new additives and a lithium secondary battery including the same. More particularly, the invention relates to a nonaq. electrolyte solution containing a lithium salt, an electrolyte compound, a first additive compound with an oxidation initiation potential of more than 4.2 V, and a second additive compound with an oxidation initiation potential of more than 4.2 V, which is higher in oxidation initiation potential than the first additive, and deposits oxidative products or form a polymer film, in oxidation, as well as a lithium secondary battery including the same. The present invention can provide a lithium secondary battery excellent in both the battery performance and the battery safety in overcharge by the combined use of the first additive and the second battery as additives to the nonaq. electrolyte solution.

IPCI H01M0010-40 [ICM,7]

IPCR H01B0001-12 [I,A]; H01M0010-40 [I,A]; H01M0010-42 [I,A]

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT Secondary batteries

(lithium; nonaq. electrolyte for lithium secondary battery)

IT Battery electrolytes

(nonaq. electrolyte for lithium secondary battery)

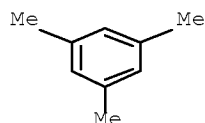
IT 108-67-8, **Mesitylene**, uses 1585-07-5, **1-Bromo-4-ethylbenzene**

RL: MOA (Modifier or additive use); USES (Uses)

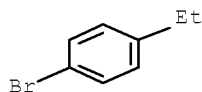
(nonaq. electrolyte for lithium secondary battery)

RN 108-67-8 HCAPLUS

CN Benzene, 1,3,5-trimethyl- (CA INDEX NAME)



RN 1585-07-5 HCAPLUS
 CN Benzene, 1-bromo-4-ethyl- (CA INDEX NAME)



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

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COMBINATION 5

L80 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2011 ACS on STN
 AN 2005:823988 HCAPLUS Full-text
 DN 143:232676
 TI Nonaqueous electrolyte for lithium secondary battery
 IN Ahn, Soon-Ho; Lee, Jae-Hyun; Cho, Jeong-Ju; Lee, Ho-Chun; Son, Mi-Young;
 Kim, Hyeong-Jin; Lee, Han-Ho
 PA LG Chem, Ltd., S. Korea
 SO PCT Int. Appl., 33 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005076403	A1	20050818	WO 2004-KR257	20040210
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1728291	A1	20061206	EP 2004-709768	20040210
	R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LI, LU, MC, NL, PT, RO, SE, SI, SK, TR				
	CN 1914761	A	20070214	CN 2004-80041548	20040210
	CN 100502132	C	20090617		
	JP 2007522632	T	20070809	JP 2006-553038	20040210
	TW 250678	B	20060301	TW 2004-106934	20040316
	US 20070141475	A1	20070621	US 2006-588481	20060801
PRAI	WO 2004-KR257	W	20040210		

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

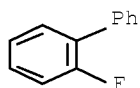
AB The invention relates to a nonaq. electrolyte solution containing new additives and a lithium secondary battery including the same. More particularly, the invention relates to a nonaq. electrolyte solution containing a lithium salt, an electrolyte compound, a first additive compound with an oxidation initiation potential of more than 4.2 V, and a second additive compound with an oxidation initiation potential of more than 4.2 V, which is higher in oxidation initiation potential than the first additive,

and deposits oxidative products or form a polymer film, in oxidation, as well as a lithium secondary battery including the same. The present invention can provide a lithium secondary battery excellent in both the battery performance and the battery safety in overcharge by the combined use of the first additive and the second battery as additives to the nonaq. electrolyte solution.

IPCI H01M0010-40 [ICM,7]
 IPCR H01B0001-12 [I,A]; H01M0010-40 [I,A]; H01M0010-42 [I,A]
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 IT Secondary batteries
 (lithium; nonaq. electrolyte for lithium secondary battery)
 IT Battery electrolytes
 (nonaq. electrolyte for lithium secondary battery)
 IT 110-00-9, **Furan** 321-60-8, **2-Fluoro-1,1'-biphenyl**
 RL: MOA (Modifier or additive use); USES (Uses)
 (nonaq. electrolyte for lithium secondary battery)
 RN 110-00-9 HCAPLUS
 CN Furan (CA INDEX NAME)



RN 321-60-8 HCAPLUS
 CN 1,1'-Biphenyl, 2-fluoro- (CA INDEX NAME)



RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

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(FILE 'HOME' ENTERED AT 15:54:12 ON 26 JUL 2011)

FILE 'HCAPLUS' ENTERED AT 15:54:26 ON 26 JUL 2011

L1 1 S ((WO2004-KR257 OR US2006-588481)/APPS OR US20070141475/PN) AN
 SEL RN

FILE 'REGISTRY' ENTERED AT 15:55:58 ON 26 JUL 2011

L2 45 S E1-E45
 L3 1 S 92-52-4
 L4 1 S 98-82-8
 L5 1 S 100-42-5
 L6 1 S 100-41-4
 L7 1 S 108-88-3
 L8 1 S 98-06-6
 L9 1 S 108-67-8
 L10 1 S 1585-07-5
 L11 92 S C8H9BR/MF AND 46.150.18/RID

L12 51 S L11 AND ETHYL
 L13 4 S L12 AND ("BENZENE, 1-BROMO-2-ETHYL-" OR "BENZENE, BROMOETHYL-
 L14 4 S L10,L13
 L15 1 S 110-00-9
 L16 1 S 321-60-8
 L17 12 S C12H9F/MF AND 2 46.150.18/RID
 L18 4 S L17 NOT (18F OR D/ELS OR ION)
 L19 4 S L16,L18

FILE 'HCAPLUS' ENTERED AT 16:04:23 ON 26 JUL 2011

L20 47725 S L3
 L21 13432 S L4
 L22 807 S L20 AND L21
 L23 83451 S L5
 L24 33237 S L6
 L25 8216 S L23 AND L24
 L26 117775 S L7
 L27 3472 S L8
 L28 1972 S L26 AND L27
 L29 10979 S L9
 L30 728 S L14
 L31 19 S L29 AND L30
 L32 12010 S L15
 L33 532 S L19
 L34 2 S L32 AND L33
 E ELECTROLYTES/CT
 L35 54175 S E3-E11
 E E3+ALL
 L36 86318 S E4 OR E10+OLD,NT OR E12+OLD,NT OR E23+OLD OR E24+OLD
 E E28+ALL
 L37 29467 S E8+OLD
 E E22+ALL
 E E27+ALL
 L38 12953 S E7+OLD
 E E12+ALL
 E E29+ALL
 L39 5601 S E3
 L40 130608 S L35-L39
 L41 6 S L22 AND L40
 L42 10 S L25 AND L40
 L43 5 S L28 AND L40
 L44 1 S L31 AND L40
 L45 1 S L34 AND L40
 L46 6 S L22 AND H01M?/IPC, IC, ICM, ICS, EPC
 L47 12 S L25 AND H01M?/IPC, IC, ICM, ICS, EPC
 L48 5 S L28 AND H01M?/IPC, IC, ICM, ICS, EPC
 L49 1 S L31 AND H01M?/IPC, IC, ICM, ICS, EPC
 L50 1 S L34 AND H01M?/IPC, IC, ICM, ICS, EPC
 E BATTERY/CT
 L51 80230 S E5+OLD,NT OR E7+OLD,NT OR E9+OLD,NT OR E11+OLD,NT
 E E13+ALL
 L52 14755 S E2+OLD,NT OR E3+OLD,NT OR E4+OLD,NT
 E BATTERIES/CT
 E E3+ALL
 L53 200789 S E1 OR E2+OLD,NT OR E3+OLD,NT OR E4+OLD,NT OR E5+OLD,NT
 E E5+ALL
 E E33+ALL
 L54 29467 S E8+OLD
 E E5+ALL
 L55 196552 S E3+NT

L56 278623 S L51-L55
 L57 6 S L22 AND L56
 L58 19 S L25 AND L56
 L59 6 S L28 AND L56
 L60 1 S L31 AND L56
 L61 1 S L34 AND L56
 L62 9 S L22 AND ?ELECTROLYT? NOT L41,L46,L57
 L63 32 S L25 AND ?ELECTROLYT? NOT L42,L47,L58
 L64 0 S L31 AND ?ELECTROLYT? NOT L44,L49,L60
 L65 0 S L34 AND ?ELECTROLYT? NOT L45,L50,L61
 L66 6 S L41,L46,L57
 L67 19 S L42,L47,L58
 L68 6 S L43,L48,L59
 L69 1 S L44,L49,L60
 L70 1 S L45,L50,L61
 L71 2 S L66 AND (AHN S? OR LEE J? OR CHO J? OR LEE H? OR SON M? OR KI
 L72 6 S L66,L71
 L73 1 S L67 AND (AHN S? OR LEE J? OR CHO J? OR LEE H? OR SON M? OR KI
 L74 19 S L67,L73
 L75 2 S L68 AND (AHN S? OR LEE J? OR CHO J? OR LEE H? OR SON M? OR KI
 L76 6 S L68,L75
 L77 1 S L69 AND (AHN S? OR LEE J? OR CHO J? OR LEE H? OR SON M? OR KI
 L78 1 S L69,L77
 L79 1 S L70 AND (AHN S? OR LEE J? OR CHO J? OR LEE H? OR SON M? OR KI
 L80 1 S L70,L79
 L81 1 S L22 AND (BATTERY OR FUEL CELL OR ELEC? CELL) NOT L72
 L82 20 S L25 AND (BATTERY OR FUEL CELL OR ELEC? CELL) NOT L74
 L83 1 S L28 AND (BATTERY OR FUEL CELL OR ELEC? CELL) NOT L76
 L84 0 S L31 AND (BATTERY OR FUEL CELL OR ELEC? CELL) NOT L78
 L85 0 S L34 AND (BATTERY OR FUEL CELL OR ELEC? CELL) NOT L80